LISTING OF CLAIMS

1-47. (Cancelled)

48. (Currently Amended) An indirect calorimeter, comprising:

a mask configured to fit tightly around a portion of a subject's face;

a flow tube housing fixably coupled to said mask through one or more mounting points on said mask;

a U-shaped, removable flow tube disposed within said flow tube housing and having a first end coupled to said mask through a mouthpiece in said mask, an elongated measurement section and a second end that is open, the flow tube configured to pass inhaled gases and exhaled gases of a ~~subject~~ user, the flow tube having a substantially continuous internal diameter so that flow therethrough is substantially laminar;

a flow meter integrally formed in ~~coupled to~~ said flow tube housing, said flow meter being configured to generate an output associated with a volume of said inhaled gases and a volume of said exhaled gases detected in the measurement section of the flow tube;

an oxygen sensor coupled to said flow tube, said oxygen sensor being configured to generate an output associated with a concentration of oxygen in said exhaled gases; and

a computation unit coupled to said flow meter and said oxygen sensor, said computation unit being configured to process said output of said flow meter and said output of said oxygen sensor to determine an amount of oxygen consumed by said subject.

49. (Currently Amended) The indirect calorimeter of claim 48, wherein said flow meter is selected from the group consisting of: an ultrasonic flow meter, and a fluorescence quench oxygen sensor.

50. (Currently Amended) The indirect calorimeter of claim 48, wherein said ~~oxygen sensor is a fluorescence quench oxygen sensor~~ measurement section includes one or more

holes to pass said inhaled gases and said exhaled gases, and wherein said flow tube housing includes an interlocking upper section and lower section, with the upper section and lower section each forming a semi-cylindrical tube half.

51. (Currently Amended) The indirect calorimeter of claim 48, wherein said ~~output of said oxygen sensor is further associated with a concentration of oxygen in said inhaled gases~~ said computation unit is configured to initiate a measurement cycle upon the occurrence of a trigger event, wherein said trigger event is selected from the group consisting of: detection of a manual switch being set to a pre-defined position, and automatic detection of the user's breathing interval reaching a pre-defined level.

52. (Previously Presented) The indirect calorimeter of claim 48, wherein said computation unit is configured to process said output of said flow meter to determine said volume of said inhaled gases and said volume of said exhaled gases, and said computation unit is configured to process said output of said oxygen sensor to determine said concentration of oxygen in said exhaled gases.

53. (Previously Presented) The indirect calorimeter of claim 52, wherein said computation unit is configured to determine said amount of oxygen consumed based on said volume of said inhaled gases, said volume of said exhaled gases, said concentration of oxygen in said exhaled gases, and a concentration of oxygen in said inhaled gases.

54. (Previously Presented) The indirect calorimeter of claim 52, wherein said computation unit is configured to determine an amount of carbon dioxide produced by said subject based on said volume of said inhaled gases, said volume of said exhaled gases, said concentration of oxygen in said exhaled gases, and a concentration of oxygen in said inhaled gases.

55. (Currently Amended) The indirect calorimeter of claim 48 wherein said one or more mounting points on said mask comprise a pair of bosses that detachably mate to

corresponding tubular supports mounted on the measurement section of the flow tube.~~, further comprising:~~

~~a respiratory connector coupled to said flow tube, said respiratory connector being configured to be supported in contact with said subject so as to pass said inhaled gases and said exhaled gases.~~

56. (Currently Amended) The indirect calorimeter of claim 55, wherein ~~said respiratory connector is a mask having an edge configured to form a seal with a portion of said subject's face~~ said mask includes an integral nasal spreader on an interior surface that attaches adhesively to the nares of the user's nose when placed over the portion of the user's face.

57. (Previously Presented) The indirect calorimeter of claim 48, further comprising a display unit coupled to said computation unit, said display unit being configured to provide indicia of said amount of oxygen consumed.

58. (Currently Amended) An indirect calorimeter, comprising:

a mask configured to fit tightly around a portion of a subject's face;

a flow tube housing fixably coupled to said mask through one or more mounting points on said mask;

a U-shaped, removable flow tube disposed within said flow tube housing and having a first end coupled to said mask through a mouthpiece in said mask, an elongated measurement section and a second end that is open, the flow tube configured to pass respiratory gases of a user, the flow tube having a substantially continuous internal diameter so that flow therethrough is substantially laminar;

a flow meter ~~coupled to~~ integrally formed within said flow tube housing, said flow meter being configured to generate a first signal associated with said respiratory gases passing through said flow tube;

an oxygen sensor coupled to said flow tube, said oxygen sensor being configured to

generate a second signal associated with said respiratory gases passing through said flow tube; and

a computation unit coupled to said flow meter and said oxygen sensor, said computation unit being configured to process said first signal and said second signal to determine a volume of said respiratory gases passing through said flow tube and a concentration of oxygen in said respiratory gases passing through said flow tube, said computation unit being configured to determine a respiratory parameter based on said volume of said respiratory gases passing through said flow tube and said concentration of oxygen in said respiratory gases passing through said flow tube.

59. (Previously Presented) The indirect calorimeter of claim 58, wherein said flow meter is an ultrasonic flow meter.

60. (Previously Presented) The indirect calorimeter of claim 58, wherein said oxygen sensor is a fluorescence quench oxygen sensor.

61. (Previously Presented) The indirect calorimeter of claim 58, wherein said computation unit is configured to determine oxygen consumption based on said volume of said respiratory gases passing through said flow tube and said concentration of oxygen in said respiratory gases passing through said flow tube.

62. (Previously Presented) The indirect calorimeter of claim 58, wherein said computation unit is configured to determine carbon dioxide production based on said volume of said respiratory gases passing through said flow tube and said concentration of oxygen in said respiratory gases passing through said flow tube.

63. (Previously Presented) The indirect calorimeter of claim 58, wherein said computation unit is configured to determine a respiratory quotient based on said volume of said respiratory gases passing through said flow tube and said concentration of oxygen

in said respiratory gases passing through said flow tube.

64. (Currently Amended) An indirect calorimeter, comprising:

a respiratory coupling unit comprising a mask and a U-shaped, removable flow tube disposed within a two-part flow tube housing and having a first end coupled to said mask through a mouthpiece in said mask, an elongated measurement section and a second end that is open, the flow tube configured to pass inhaled gases and exhaled gases of a subject, the flow tube having a substantially continuous internal diameter so that flow therethrough is substantially laminar;

a first sensor configured to generate an output associated with inhaled gases and exhaled gases of a subject; a second sensor configured to generate an output associated with said exhaled gases; and

a computation unit coupled to said first sensor and said second sensor, said computation unit being configured to process said output of said first sensor to determine a volume of said inhaled gases and a volume of said exhaled gases, said computation unit being configured to process said output of said second sensor to determine a concentration of oxygen in said exhaled gases, said computation unit being configured to determine an amount of carbon dioxide produced by said subject based on said volume of said inhaled gases, said volume of said exhaled gases, and said concentration of oxygen in said exhaled gases, said computation configured to initiate a measurement cycle upon the occurrence of a trigger event, wherein said trigger event is selected from the group consisting of: detection of a manual switch being set to a pre-defined position, and automatic detection of the user's breathing interval reaching a pre-defined level.

65. (Previously Presented) The indirect calorimeter of claim 64, wherein said first sensor is a flow meter.

66. (Previously Presented) The indirect calorimeter of claim 65, wherein said flow meter includes a plurality of ultrasonic transducers.

67. (Previously Presented) The indirect calorimeter of claim 64, wherein said second sensor is an oxygen sensor.

68. (Previously Presented) The indirect calorimeter of claim 67, wherein said oxygen sensor is a fluorescence quench oxygen sensor.

69. (Previously Presented) The indirect calorimeter of claim 64, wherein said computation unit is configured to determine an amount of oxygen consumed by said subject based on said volume of said inhaled gases, said volume of said exhaled gases, and said concentration of oxygen in said exhaled gases.

70. (Previously Presented) The indirect calorimeter of claim 64, wherein said computation unit is configured to determine a respiratory quotient of said subject based on said volume of said inhaled gases, said volume of said exhaled gases, and said concentration of oxygen in said exhaled gases.

71. (Previously Presented) The indirect calorimeter of claim 64, further comprising: a flow tube configured to pass said inhaled gases and said exhaled gases as said subject breathes, said first sensor and said second sensor being coupled to said flow tube.

72 - 79. (Cancelled)